# BIBLIOGRAPHY OF DOCTORAL DISSERTATIONS 1986-87

## NATURAL & APPLIED SCIENCES

ASSOCIATION OF INDIAN UNIVERSITIES
NEW DELHI
1990

## PROJECT TEAM

| | |
|---|---|
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# PREFACE

The bibliography lists 3,233 doctoral dissertations in Natural and Applied Sciences accepted for award of doctoral degrees by Indian Universities during July 1986 to June 1987. This supplements the Bibliography of Doctoral Dissertations in Social Sciences and Humanities that had listed 2,815 doctoral dissertations accepted by Indian Universities during the same period. Together the two volumes record the research output of Indian Universities during July 1986 to June 1987.

The salient feature of the bibliography in hand is the depth classification schedule developed for the discipline of Biochemistry. This was necessitated by its being accepted as an independent discipline. The schedule has been developed with the help of the provisions contained in the Universal Decimal Classification scheme (2nd Edition).

We hope the academic community will receive this bibliography with the same warmth that it has been according to the earlier volumes.

S.K. AGRAWALA
Secretary
Association of Indian Universities

AIU House
16 Kotla Marg
New Delhi—110 002
17th October, 1990

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# CONSPECTUS

This bibliography lists 3,233 theses accepted during the year 1986-87 by the Indian Universities for doctoral degrees in the subjects of Natural and Applied Sciences. These have been classified by the Dewey Decimal Classification (19th Edition) and this governs their general arrangement. Some changes have however been made to meet the demands of literary warrant. Environmental Sciences, Biochemistry and Solar Energy have been treated as independent disciplines. Crystallography has been shifted from Chemistry to Physics and listed immediately before Modern Physics. Depth schedule has been developed for Biochemistry with the help of the provisions in the Universal Decimal Classification (IInd Edition).

Abbreviations have been used to render the names of the various universities/institutes and research centres, and a complete list of these abbreviations and their expansions follows the Alphabetic Subject Index. For theses where the information about the year when the research was begun was not available, only the year of award of degree has been given. Availability note provides information about the availability of theses for consultation and use by the research scholar. Unless indicated by an asterisk to the serial number a copy of each of the thesis listed is available in the respective university/institute library. The thesis is available in the university/institute office when the serial number is marked by an asterisk. As regard the guides under whom research has been conducted, information has been provided in the majority of the cases. However where complete address was not available we had to be content with the name of the guide only. There are, however, a few cases where even the name could not be ascertained.

An alphabetic subject index and a scholar index are included to facilitate reference. The scholar index is arranged alphabetically according to the surnames of the scholars and directs the user to the text with the help of the runnning serial number of the entries.

The following statistical table gives university and subjectwise distribution of theses accepted in the year 1986-87.

**University and Subject-wise distribution of Doctoral Dissertations in Natural and Applied Sciences accepted by Indian Universities during 1986-87**

| *University/Institute* | *Agriculture* | *Animal Husbandry* | *Anthropology* | *Astronomy* | *Biochemistry* | *Biology* | *Botany* | *Chemistry* | *Earth Sciences* | *Engineering* | *Environmental Sciences* | *Forensic Sciences* | *Mathematics* | *Medical Sciences* | *Microbiology* | *Paleontology* | *Physics* | *Technology* | *Zoology* | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AIIMS | - | - | - | - | 2 | - | - | - | - | - | - | - | - | 9 | - | - | - | - | - | 11 |
| AMU | - | 1 | - | - | 7 | - | 15 | 23 | 5 | 1 | 2 | - | 3 | 1 | - | - | 10 | 1 | 10 | 79 |
| AP Agrl | 18 | 11 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | 30 |
| Amravati | - | - | - | - | - | - | - | 2 | - | - | 2 | - | - | - | - | - | - | - | - | 4 |
| Andhra | 8 | - | 1 | - | 1 | 2 | 7 | 9 | 11 | 1 | 1 | - | 3 | 3 | - | - | 5 | - | 11 | 63 |
| Anna | - | - | - | - | - | - | - | 1 | - | 2 | - | - | 2 | - | - | - | 4 | 5 | - | 14 |
| Annamalai | 3 | - | - | - | - | 6 | 7 | 4 | 1 | - | - | - | 1 | - | - | - | 3 | - | 1 | 26 |
| Assam Agrl | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2 |
| Avadh | - | - | - | 1 | - | - | 4 | 5 | - | - | 1 | - | 2 | - | - | - | - | - | 1 | 14 |
| Awadhesh | 4 | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 1 | - | 1 | 7 |

*(Contd.)*

**University and Subject-wise distribution of Doctoral Dissertations in Natural and Applied Sciences accepted by Indian Universities during 1986-87**

| *University/Institute* | *Agriculture* | *Animal Husbandry* | *Anthropology* | *Astronomy* | *Biochemistry* | *Biology* | *Botany* | *Chemistry* | *Earth Sciences* | *Engineering* | *Environmental Sciences* | *Forensic Sciences* | *Mathematics* | *Medical Sciences* | *Microbiology* | *Paleontology* | *Physics* | *Technology* | *Zoology* | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B C Krishi | 26 | 11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 37 |
| BHU | 7 | - | - | - | - | - | 1 | 11 | 1 | - | - | - | 2 | - | - | - | 2 | - | 2 | 26 |
| Bangalore | - | - | - | 1 | - | - | 2 | 1 | 1 | - | - | - | 1 | 6 | - | - | 2 | - | 5 | 19 |
| Baroda | - | - | - | - | 4 | 1 | 2 | 7 | 2 | 1 | - | - | - | 2 | 3 | - | 1 | - | 1 | 24 |
| Berhampur | 3 | - | - | - | 4 | - | 7 | 6 | - | - | 2 | - | 2 | - | - | - | 1 | - | 9 | 34 |
| Bharathiar | - | - | - | - | - | - | 1 | - | - | 1 | - | - | - | - | - | - | - | - | - | 2 |
| Bhavnagar | - | - | - | - | - | - | - | 8 | - | - | - | - | - | - | - | - | - | - | - | 8 |
| Bhopal | 4 | - | - | - | - | 1 | 1 | 1 | - | - | 1 | - | 2 | 4 | - | - | - | - | 10 | 24 |
| Bihar | - | - | - | - | - | - | 1 | 1 | - | - | - | - | - | - | - | - | - | - | - | 2 |
| Birsa Agrl | 7 | 11 | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | 19 |

**University and Subject-wise distribution of Doctoral Dissertations in Natural and Applied Sciences accepted by Indian Universities during 1986-87**

| *University/Institute* | *Agriculture* | *Animal Husbandry* | *Anthropology* | *Astronomy* | *Biochemistry* | *Biology* | *Botany* | *Chemistry* | *Earth Sciences* | *Engineering* | *Environmental Sciences* | *Forensic Sciences* | *Mathematics* | *Medical Sciences* | *Microbiology* | *Paleontology* | *Physics* | *Technology* | *Zoology* | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bombay | 3 | - | - | 3 | 14 | 1 | 5 | 52 | 4 | - | 4 | - | 7 | 26 | 7 | 1 | 29 | 8 | 2 | 166 |
| Bundelkhand | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | 1 |
| Burdwan | - | - | - | - | 2 | - | 2 | 9 | - | 1 | - | - | 1 | - | - | - | 3 | - | 9 | 27 |
| CSAT | 29 | 3 | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | 33 |
| CUST | 1 | - | - | - | 1 | 7 | - | - | 2 | - | - | - | 1 | - | - | - | 4 | - | - | 16 |
| Calcutta | 1 | - | - | 1 | 17 | 3 | 5 | 10 | 1 | 4 | 1 | - | 3 | 6 | - | - | 7 | - | 7 | 66 |
| Calicut | 1 | - | - | - | - | - | 4 | 3 | - | - | - | - | - | - | - | - | - | - | - | 8 |
| Dayanand | - | - | - | - | - | - | - | 3 | - | - | - | - | 2 | - | - | - | 1 | - | - | 6 |
| Delhi | 3 | - | 2 | - | 8 | - | 15 | 29 | 8 | 2 | - | - | 2 | 7 | - | - | 15 | 3 | 9 | 103 |
| Devi Ahilya | - | - | - | - | 1 | - | - | 2 | - | 1 | - | - | 1 | - | - | - | - | - | - | 5 |

**University and Subject-wise distribution of Doctoral Dissertations in Natural and Applied Sciences accepted by Indian Universities during 1986-87**

| *University/Institute* | *Agriculture* | *Animal Husbandry* | *Anthropology* | *Astronomy* | *Biochemistry* | *Biology* | *Botany* | *Chemistry* | *Earth Sciences* | *Engineering* | *Environmental Sciences* | *Forensic Sciences* | *Mathematics* | *Medical Sciences* | *Microbiology* | *Paleontology* | *Physics* | *Technology* | *Zoology* | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dibrugarh | - | - | - | - | - | - | - | 5 | - | - | - | - | - | - | - | - | - | - | 1 | 6 |
| Durgavati | 9 | - | - | - | - | - | 9 | 5 | - | - | 1 | - | 2 | - | - | - | 3 | - | 3 | 32 |
| Garhwal | 5 | - | - | - | - | - | 11 | 21 | 6 | 1 | 1 | - | 8 | - | - | - | 1 | 1 | 15 | 70 |
| Gauhati | 9 | 1 | 2 | - | - | - | 3 | 2 | 1 | - | - | - | - | - | - | - | - | - | 3 | 21 |
| Ghasidas | 1 | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | 1 | 3 |
| Gorakhpur | 1 | - | - | - | - | - | 11 | 10 | - | - | 4 | - | 4 | 1 | - | - | 6 | - | 7 | 44 |
| Gujarat | 4 | - | - | - | - | - | 2 | 6 | 1 | - | 1 | - | 2 | 3 | - | 1 | 3 | 1 | 3 | 27 |
| Gujarat Agrl | 14 | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | 20 |
| Gujarat Ayurved | - | - | - | - | - | - | - | - | - | - | - | - | - | 3 | - | - | - | - | - | 3 |
| Gulbarga | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |

**University and Subject-wise distribution of Doctoral Dissertations in Natural and Applied Sciences accepted by Indian Universities during 1986-87**

| *University/Institute* | *Agriculture* | *Animal Husbandry* | *Anthropology* | *Astronomy* | *Biochemistry* | *Biology* | *Botany* | *Chemistry* | *Earth Sciences* | *Engineering* | *Environmental Sciences* | *Forensic Sciences* | *Mathematics* | *Medical Sciences* | *Microbiology* | *Paleontology* | *Physics* | *Technology* | *Zoology* | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HAU | 35 | 28 | - | - | 3 | - | - | - | - | - | - | - | - | - | 6 | - | - | - | 2 | 74 |
| HP | - | - | - | - | - | - | 2 | 5 | - | - | - | - | 3 | - | - | - | 4 | - | 3 | 17 |
| HP Krishi | 17 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 17 |
| HS Gour | 3 | - | - | - | - | 3 | 4 | 8 | 1 | - | - | - | 2 | 3 | - | - | 3 | - | 10 | 37 |
| Hyderabad | 1 | - | - | - | 2 | - | 2 | 2 | - | - | - | - | 1 | - | 1 | - | 1 | - | 1 | 11 |
| IARI | 81 | - | - | - | 4 | - | 1 | 1 | - | - | - | - | - | 1 | 8 | - | - | - | - | 96 |
| IISc | 1 | - | - | - | 18 | 3 | - | 22 | 2 | 24 | - | - | 4 | - | 3 | - | 8 | 3 | - | 88 |
| IIT Bombay | - | - | - | - | - | - | - | 7 | 6 | 15 | 2 | - | 3 | - | - | - | 2 | 4 | - | 39 |
| IIT Delhi | 3 | - | - | - | 1 | - | - | 7 | 3 | 46 | 4 | - | 3 | 1 | - | - | 16 | 10 | - | 94 |
| IIT Kanpur | - | - | - | - | - | - | - | 10 | - | 12 | 2 | - | 10 | - | - | - | 5 | 2 | - | 41 |

**University and Subject-wise distribution of Doctoral Dissertations in Natural and Applied Sciences accepted by Indian Universities during 1986-87**

| *University/Institute* | *Agriculture* | *Animal Husbandry* | *Anthropology* | *Astronomy* | *Biochemistry* | *Biology* | *Botany* | *Chemistry* | *Earth Sciences* | *Engineering* | *Environmental Sciences* | *Forensic Sciences* | *Mathematics* | *Medical Sciences* | *Microbiology* | *Paleontology* | *Physics* | *Technology* | *Zoology* | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IIT Kharagpur | 9 | - | - | - | - | - | - | 5 | 6 | 31 | - | - | 6 | - | - | - | 7 | 8 | - | 72 |
| IIT Madras | 1 | - | - | - | 1 | - | - | 24 | - | 63 | - | - | 13 | 1 | - | - | 19 | 17 | - | 139 |
| ISI | - | - | - | - | - | - | - | - | - | - | - | - | 3 | - | - | - | - | - | - | 3 |
| ISM | - | - | - | - | - | - | - | 1 | 7 | - | 1 | - | 1 | - | - | - | 1 | 2 | - | 13 |
| IVRI | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 4 |
| J N Krishi | 17 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 17 |
| J N Tech | - | - | - | - | - | - | - | - | - | 1 | - | - | 1 | - | - | - | - | - | - | 2 |
| JNU | 6 | - | - | - | 2 | 6 | 3 | - | 1 | - | 5 | - | - | 2 | 1 | - | - | - | - | 26 |
| Jammu | - | - | - | - | - | - | 1 | 5 | 2 | - | - | - | 2 | - | - | - | 3 | - | 2 | 15 |
| Jiwaji | 1 | - | - | - | 2 | - | 1 | 3 | - | - | - | - | - | - | - | - | 1 | - | - | 8 |

**University and Subject-wise distribution of Doctoral Dissertations in Natural and Applied Sciences accepted by Indian Universities during 1986-87**

| *University/Institute* | *Agriculture* | *Animal Husbandry* | *Anthropology* | *Astronomy* | *Biochemistry* | *Biology* | *Botany* | *Chemistry* | *Earth Sciences* | *Engineering* | *Environmental Sciences* | *Forensic Sciences* | *Mathematics* | *Medical Sciences* | *Microbiology* | *Paleontology* | *Physics* | *Technology* | *Zoology* | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kakatiya | - | - | - | - | - | - | 5 | 6 | 1 | 4 | 1 | - | 5 | 1 | - | - | 3 | 1 | 7 | 34 |
| Kalyani | 1 | - | - | - | - | - | 5 | 7 | .. | - | - | - | 8 | - | - | - | 2 | - | 9 | 32 |
| Kanpur | 7 | - | - | - | 1 | 1 | 1 | 6 | - | - | 3 | - | - | 1 | - | - | 2 | - | 1 | 23 |
| Karnatak | 1 | - | 2 | - | - | - | 7 | 7 | 5 | - | 3 | - | 2 | - | - | - | 6 | - | 4 | 37 |
| Kashmir | 1 | - | - | - | - | - | 6 | 2 | - | - | 1 | - | - | - | - | - | 3 | | 2 | 15 |
| Kerala | - | - | - | - | 3 | 1 | 3 | 2 | - | - | - | - | - | 1 | - | - | - | - | 1 | 11 |
| Krishnadevaraya | - | - | - | - | - | - | 1 | 3 | - | - | 1 | - | 1 | - | - | - | 2 | - | - | 8 |
| Kumaun | 1 | - | - | 1 | - | - | 5 | 6 | 3 | 1 | 2 | - | 2 | - | - | - | 2 | - | 2 | 25 |
| Kurukshetra | 5 | 10 | - | - | 2 | - | 3 | 4 | 1 | 1 | - | - | 1 | - | - | - | 1 | 2 | 1 | 31 |
| Lucknow | 1 | - | - | - | 1 | - | 3 | 10 | 3 | - | 1 | - | 4 | 2 | - | - | 2 | - | 2 | 29 |

## University and Subject-wise distribution of Doctoral Dissertations in Natural and Applied Sciences accepted by Indian Universities during 1986-87

| *University/Institute* | *Agriculture* | *Animal Husbandry* | *Anthropology* | *Astronomy* | *Biochemistry* | *Biology* | *Botany* | *Chemistry* | *Earth Sciences* | *Engineering* | *Environmental Sciences* | *Forensic Sciences* | *Mathematics* | *Medical Sciences* | *Microbiology* | *Paleontology* | *Physics* | *Technology* | *Zoology* | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M P Agrl | 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 16 |
| Madras | 10 | - | - | - | 6 | 1 | 8 | 16 | - | 1 | 4 | 1 | 2 | 9 | - | - | 7 | - | 10 | 75 |
| Madurai | 4 | - | 1 | - | 2 | 3 | 7 | 4 | - | 2 | 1 | - | 2 | 2 | 3 | - | 5 | - | 7 | 43 |
| Magadh | 1 | - | - | - | - | - | 2 | 1 | - | - | - | - | 2 | - | - | - | 3 | - | - | 9 |
| Manipur | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | 1 |
| Marathwada | - | - | - | - | 1 | - | 12 | 7 | - | - | 5 | - | 4 | - | 2 | - | - | - | 16 | 47 |
| Marathwada Krishi | 11 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 14 |
| Meerut | 3 | - | - | - | - | - | - | 15 | - | - | 1 | - | - | - | - | - | - | 1 | - | 20 |
| Mysore | 3 | - | - | - | 11 | - | 3 | 3 | 3 | 1 | - | - | 2 | 2 | - | - | 4 | 2 | 3 | 37 |
| NBU | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | 1 | - | - | 2 |
| NEHU | - | - | - | - | - | - | 10 | 2 | - | - | - | - | 1 | - | - | - | 2 | - | 3 | 18 |

**University and Subject-wise distribution of Doctoral Dissertations in Natural and Applied Sciences accepted by Indian Universities during 1986-87**

| *University/Institute* | *Agriculture* | *Animal Husbandry* | *Anthropology* | *Astronomy* | *Biochemistry* | *Biology* | *Botany* | *Chemistry* | *Earth Sciences* | *Engineering* | *Environmental Sciences* | *Forensic Sciences* | *Mathematics* | *Medical Sciences* | *Microbiology* | *Paleontology* | *Physics* | *Technology* | *Zoology* | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagarjuna | - | - | - | - | - | - | 3 | 3 | - | - | - | - | - | - | - | - | 5 | - | 1 | 12 |
| Nagpur | 1 | - | - | - | 2 | - | 2 | 16 | 1 | 1 | 2 | - | 1 | 2 | 3 | - | 2 | 2 | 6 | 41 |
| Nanak | 1 | - | - | - | 1 | - | - | 6 | - | - | - | - | 1 | - | - | - | 3 | - | - | 12 |
| Narendra Dev | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 3 |
| OUAT | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 |
| Osmania | 3 | - | 1 | 1 | 2 | 1 | 12 | 22 | 8 | 1 | - | 1 | 5 | 2 | - | - | 5 | 1 | 8 | 73 |
| PAU | 24 | 6 | - | - | 1 | 1 | 4 | 1 | - | - | - | - | - | - | 3 | - | - | 2 | 5 | 47 |
| PGI | - | - | - | - | 4 | - | - | - | - | - | - | - | - | 16 | - | - | - | - | - | 20 |
| Panjab | 5 | - | 1 | - | 3 | - | 6 | 4 | 3 | 1 | - | - | 3 | 3 | 2 | - | 1 | - | 5 | 37 |
| Pant | 19 | 5 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | 25 |
| Patel | - | - | - | - | - | - | 10 | 8 | - | - | - | - | - | - | 4 | - | 3 | - | - | 25 |

**University and Subject-wise distribution of Doctoral Dissertations in Natural and Applied Sciences accepted by Indian Universities during 1986-87**

| *University/Institute* | *Agriculture* | *Animal Husbandry* | *Anthropology* | *Astronomy* | *Biochemistry* | *Biology* | *Botany* | *Chemistry* | *Earth Sciences* | *Engineering* | *Environmental Sciences* | *Forensic Sciences* | *Mathematics* | *Medical Sciences* | *Microbiology* | *Paleontology* | *Physics* | *Technology* | *Zoology* | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Poona | - | - | 3 | - | - | 1 | 2 | 38 | 8 | 3 | 1 | - | 5 | 6 | 4 | 1 | 10 | 3 | 4 | 89 |
| Punjabi | 1 | - | 4 | 1 | 1 | - | 1 | 4 | - | - | - | 3 | 2 | - | - | - | 5 | - | 1 | 23 |
| Punjabrao Krishi | 2 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 4 |
| Rajasthan | 2 | - | - | - | 1 | 2 | 11 | 20 | - | 4 | 1 | - | 1 | 3 | - | - | 10 | 1 | 12 | 68 |
| RAU | 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 16 |
| Ravishankar | - | - | - | - | 2 | - | - | 1 | 1 | - | 1 | - | 1 | - | - | - | 3 | - | 1 | 10 |
| Rohilkhand | 4 | 3 | - | - | 1 | - | 2 | 5 | - | - | 2 | - | - | - | - | - | - | - | 2 | 19 |
| Roorkee | 1 | - | - | 1 | - | - | - | 4 | 3 | 10 | 1 | - | 2 | 1 | - | - | 2 | 4 | - | 29 |
| Sambalpur | - | - | - | - | - | - | - | 4 | - | - | - | - | - | - | - | - | 1 | 1 | 3 | 9 |

**University and Subject-wise distribution of Doctoral Dissertations in Natural and Applied Sciences accepted by Indian Universities during 1986-87**

| *University/Institute* | *Agriculture* | *Animal Husbandry* | *Anthropology* | *Astronomy* | *Biochemistry* | *Biology* | *Botany* | *Chemistry* | *Earth Sciences* | *Engineering* | *Environmental Sciences* | *Forensic Sciences* | *Mathematics* | *Medical Sciences* | *Microbiology* | *Paleontology* | *Physics* | *Technology* | *Zoology* | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Saurashtra | | - | - | - | 1 | - | 2 | 8 | - | - | - | - | - | - | - | - | 2 | - | 2 | 15 |
| Shivaji | 1 | - | - | - | - | - | 5 | 10 | - | - | - | - | - | - | 2 | - | 1 | - | 3 | 22 |
| Sukhadia | 12 | - | - | - | - | - | - | 1 | - | 1 | 1 | - | 1 | - | - | - | - | - | 1 | 17 |
| T N Agrl | 23 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 23 |
| UAS, Bangalore | 17 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | 20 |
| UAS, Dharwad | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 |
| Utkal | 5 | - | - | - | - | - | 13 | 11 | - | - | 1 | - | 4 | - | - | - | 3 | - | 4 | 41 |
| Venkateswara | 3 | - | - | - | - | - | - | 3 | 4 | 2 | - | - | 4 | - | - | - | 1 | - | 2 | 19 |
| Vikram | 4 | - | - | - | - | - | 3 | 9 | 2 | - | 3 | - | - | - | - | - | 5 | - | 3 | 29 |

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# ABBREVIATIONS

## A. UNIVERSITIES/INSTITUTES

| | |
|---|---|
| AIIMS | All India Institute of Medical Sciences, New Delhi |
| AMU | Aligarh Muslim University |
| AP Agrl | Andhra Pradesh Agricultural University, Hyderabad |
| Amravati | Amravati University, Amravati |
| Andhra | Andhra University, Waltair |
| Anna | Anna University, Madras |
| Annamalai | Annamali University, Annamalainagar |
| Assam Agrl | Assam Agricultural University, Jorhat |
| Avadh | Avadh University, Faizabad |
| Awadhesh | Awadhesh Pratap Singh University, Rewa |
| BC Krishi | Bidhan Chandra Krishi Vishwavidyalaya, Mohunpur |
| BHU | Banaras Hindu University, Varanasi |
| Bangalore | Bangalore University |
| Baroda | Maharaja Sayajirao University of Baroda |
| Berhampur | Berhampur University |
| Bharathiar | Bharathiar University, Coimbatore |
| Bhavnagar | Bhavnagar University |
| Bhopal | Bhopal University |
| Bihar | University of Bihar, Muzaffapur |
| Birsa Agrl | Birsa Agricultural University, Ranchi |
| Bombay | University of Bombay |
| Bundelkhand | Bundelkhand University |
| Burdwan | University of Burdwan |
| CSAT, Kanpur | Chandra Shekhar Azad University of Agriculture & Technology, Kanpur |
| CUST | Cochin University of Science & Technology, Cochin |

| | |
|---|---|
| Calcutta | University of Calcutta |
| Calicut | Calicut University |
| Dayanand | Maharshi Dayanand University, Rohtak |
| Delhi | University of Delhi |
| Devi Ahilya | Devi Ahilya Vishwavidyalaya, Indore |
| Dibrugarh | Dibrugarh University |
| Durgavati | Rani Durgavati Vishwavidyalaya, Jabalpur |
| Garhwal | Garhwal University, Srinagar |
| Gauhati | Gauhati University, Guwahati |
| Ghasidas | Guru Ghasidas University, Bilaspur |
| Gorakhpur | University of Gorakhpur |
| Gujarat | Gujarat University, Ahmedabad |
| Gujarat Agrl | Gujarat Agricultural University, Dantiwada |
| Gujarat Ayurved | Gujarat Ayurved University, Jamnagar |
| Gulbarga | Gulbarga University |
| HAU | Haryana Agricultural University, Hisar |
| HP | Himachal Pradesh University, Shimla |
| HP Krishi | Himachal Pradesh Krishi Vishwavidyalaya, Palampur |
| HS Gour | Dr Hari Singh Gour Vishwavidyalaya, Sagar |
| Hyderabad | University of Hyderabad |
| IARI | Indian Agricultural Research Institute New Delhi |
| IISc | Indian Institute of Science, Bangalore |
| IIT Bombay | Indian Institute of Technology, Bombay |
| IIT Delhi | Indian Institute of Technology, Delhi |
| IIT Kanpur | Indian Institute of Technology, Kanpur |
| IIT Kharagpur | Indian Institute of Technology, Kharagpur |
| IIT Madras | Indian Institute of Technology, Madras |
| ISI | Indian Statistical Institute, Calcutta |
| ISM | Indian School of Mines, Dhanbad |
| IVRI | Indian Veterinary Research Institute, Izatnagar |
| JN Krishi | Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur |
| JN Tech | Jawaharlal Nehru Technological University, Hyderabad |

| | |
|---|---|
| JNU | Jawaharlal Nehru University, New Delhi |
| Jammu | University of Jammu |
| Jiwaji | Jiwaji University, Gwalior |
| Kakatiya | Kakatiya University, Warangal |
| Kalyani | University of Kalyani |
| Kanpur | Kanpur University |
| Karnatak | Karnatak University, Dharwad |
| Kashmir | University of Kashmir, Srinagar |
| Kerala | University of Kerala, Trivandrum |
| Krishnadevaraya | Sri Krishnadevaraya University, Anantapur |
| Kumaun | Kumaun University, Nainital |
| Kurukshetra | Kurukshetra University |
| Lucknow | University of Lucknow |
| MP Krishi | Mahatma Phule Krishi Vidyapeeth, Rahuri |
| Madras | University of Madras |
| Madurai | Madurai Kamaraj University |
| Magadh | Magadh University, Bodh Gaya |
| Manipur | Manipur University, Imphal |
| Marathwada | Marathwada University, Aurangabad |
| Marathwada Krishi | Marathwada Krishi Vidyapeeth, Parbhani |
| Meerut | Meerut University |
| Mysore | University of Mysore |
| NBU | North Bengal University, Rajarammohanpur, Darjeeling |
| NEHU | North Eastern Hill University, Shillong |
| Nagarjuna | Nagarjuna University, Nagarjunanagar, Guntur |
| Nagpur | Nagpur University |
| Nanak Dev | Guru Nanak Dev University, Amritsar |
| Narendra Dev | Narendra Deva University of Agriculture and Technology, Faizabad |
| OUAT | Orissa University of Agriculture & Technology, Bhubaneswar |
| Osmania | Osmania University, Hyderabad |
| PAU | Punjab Agricultural University, Ludhiana |

| | |
|---|---|
| PGI | Postgraduate Institute of Medical Education & Research, Chandigarh |
| Panjab | Panjab University, Chandigarh |
| Pant | Govind Ballabh Pant University of Agriculture and Technology, Pantnagar |
| Patel | Sardar Patel University, Vallabh Vidyanagar |
| Poona | University of Poona, Pune |
| Punjabi | Punjabi University, Patiala |
| Punjabrao | Punjabrao Krishi Vidyapeeth, Akola |
| RAU | Rajendra Agricultural University, Samastipur |
| Rajasthan | University of Rajasthan, Jaipur |
| Ravishankar | Ravishankar University, Raipur |
| Rohilkhand | Rohilkhand University |
| Roorkee | University of Roorkee |
| Sambalpur | Sambalpur University, Sambalpur |
| Saurashtra | Saurashtra University, Rajkot |
| Shivaji | Shivaji University, Kohlapur |
| Sukhadia | Sukhadia University, Udaipur |
| T N Agrl | Tamilnadu Agricultural University, Coimbatore |
| UAS Bangalore | University of Agricultural Sciences, Bangalore |
| UAS Dharwad | University of Agricultural Sciences, Dharwad |
| Utkal | Utkal University, Bhubaneswar |
| Venkateswara | Sri Venkateswara University, Tirupati |
| Vikram | Vikram University, Ujjain |
| Visva Bharati | Visva Bharati, Santiniketan |
| Y S Parmar | Y S Parmar University of Horticulture & Forestry, Solan |

## B. RESEARCH CENTRES

| | |
|---|---|
| BARC, Bombay | Bhabha Atomic Research Centre, Bombay |
| BSI, Dehradun | Botanical Survey of India, Dehradun |
| CDRI, Lucknow | Central Drug Research Institute, Lucknow |

| | |
|---|---|
| CECRI, Karaikudi | Central Electro Chemical Research Institute, Karaikudi, Tamilnadu |
| CFRI, Dhanbad | Central Fuel Research Institute, Dhanbad |
| CFTRI, Mysore | Central Food Technological Research Institute, Mysore |
| CLRI, Madras | Central Leather Research Institute, Madras |
| CMFRI, Cochin | Central Marine Fisheries Research Institute, Cochin |
| CPCRI, Kasaragod | Central Plantation Crops Research Institute, Kasaragod |
| CPIR, Goa | Centre of Postgraduate Instruction and Research, Goa |
| CPRI, Shimla | Central Potato Research Institute, Shimla |
| CRI, Bombay | Cancer Research Institute, Bombay |
| CRRI, Cuttack | Central Rice Research Institute, Cuttack |
| CSMCRI, Bhavnagar | Central Salt and Marine Chemicals Research Institute, Bhavnagar |
| FMR, Bombay | The Foundation for Medical Research, Bombay |
| FRI, Dehradun | Forest Research Institute, Dehradun |
| HBTI, Kanpur | Harcourt Butler Technological Institute, Kanpur |
| IAT, Pune | Institute of Armament Technology, Pune |
| IIP, Dehradun | Indian Institute of Petroleum, Dehradun |
| IITM, Pune | Indian Institute of Tropical Meteorology, Pune |
| IRR, Bombay | Institute of Research in Reproduction, Bombay |
| JARI, Barrackpore | Jute Agricultural Research Institute, Barrackpore |
| JIPMER, Pondicherry | Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry |
| MACS, Pune | Maharashtra Association for the Cultivation of Science, Pune |
| MBRS, Ratnagiri | Marine Biological Research Station, Ratnagiri |

| | |
|---|---|
| MRL, Solan | Mushroom Research Laboratory, Chambaghat, Solan |
| NCL, Pune | National Chemical Laboratory, Pune |
| NCML, Bombay | National Chemical Metallurgical Laboratory, Bombay |
| NIO, Goa | National Institute of Oceanography, Goa |
| NPOL, Cochin | Naval Physical and Oceanographic Laboratory, Cochin |
| NSI, Kanpur | National Sugar Institute, Kanpur |
| RFRS, Shimla | Regional Fruit Research Station, Mashobra, Shimla |
| RRL | Regional Research Laboratory |
| SATI, Vidisha | Science and Technological Institute, Vidisha |
| SFSL, Bhubaneswar | State Forensic Science Laboratory, Rasulgarh, Bhubaneswar |
| TIFR, Bombay | Tata Institute of Fundamental Research, Bombay |
| WIHG, Dehradun | Wadia Institute of Himalayan Geology, Dehradun |
| ZSI, Calcutta | Zoological Survey of India, Calcutta |

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